

REMARKS

Claims 1–8 are pending in the present application.

Claims 1–8 were amended solely to eliminate the European-style use of “characterized” and reference characters in the claims. The claim scope has not been changed by these amendments, which maintain the same substantive scope without narrowing or otherwise altering the scope of the claims.

The specification was amended to define various acronyms. No new matter has been added to the specification by these amendments.

Reconsideration of the claims is respectfully requested.

35 U.S.C. § 102 (Anticipation)

Claims 1–8 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,420,866 to *Wasilewski*. This rejection is respectfully traversed.

A prior art reference anticipates the claimed invention under 35 U.S.C. § 102 only if every element of a claimed invention is identically shown in that single reference, arranged as they are in the claims. MPEP § 2131; *In re Bond*, 910 F.2d 831, 832, 15 U.S.P.Q.2d 1566, 1567 (Fed. Cir. 1990). Anticipation is only shown where each and every limitation of the claimed invention is found in a single prior art reference. MPEP § 2131; *In re Donohue*, 766 F.2d 531, 534, 226 U.S.P.Q. 619, 621 (Fed. Cir. 1985).

Independent claims 1, 3, 5 and 7 each recite that the multiplex signal comprises periodically repeated modules each comprising at least one object. Such a feature is not shown or suggested by the cited reference. Modules, as the term is used in the relevant art and in the specification, are container objects which comprise a number of MPEG-2 messages and contain at least one object. *Wasilewski* merely discloses a conventional program map table 68 for a plurality of broadcast streams, comprising a number of fields 72 having sub-fields 80, 82, 84 and 86. The program map table 68 is not depicted or described as a module, nor are the sub-fields 80, 82, 84 and 86 depicted or described as being either messages or objects. Program map table 68 is simply a sequence of bytes each interpreted according to a pre-defined meaning assigned to such bytes (map table length, program number, elementary packet identifier count, etc.).

None of the fields within program map table 68 are shown or described as being objects. The term "objects," as used in the art and in the specification, refers to self-contained executable code segments.

Finally, the program map table does not contain information regarding extraction of objects from the "module" or program map table. The program map table merely contains information regarding other streams being concurrently transmitted (e.g., on other frequencies or channels).

Therefore, the rejection of claims 1–8 under 35 U.S.C. § 102 has been overcome.

AMENDMENTS WITH MARKINGS TO SHOW CHANGES MADE

The paragraphs bridging page 1, line 10 through page 2, line 7 of the specification were amended herein as follows:

A transmission system [according to the preamble]of the type described above is known from the International Organization for Standardization/International Electrotechnical Commission (ISO/IEC) International Standard 13818-6. "MPEG-2 Digital Storage Media Command and Control" July 12, 1996 (where "MPEG-2" refers to version 2 of the Motion Pictures Expert Group standard). In modern digital broadcast systems a transmitter, e.g., a headend, typically transmits a large number of services (or channels) to a plurality of receivers, like for instance television sets or set-top boxes. Such a service can contain an audio/video stream, an interactive application (for example in accordance with version 5 of the Multimedia and Hypermedia information coding Expert Group or "MHEG-5" format), other kinds of data or a combination of these elements. An MPEG-2 transport stream is a multiplex of a number of services. Typically, a transmitter transmits several transport streams to the set-top boxes. A set-top box can tune to a specific transport stream and is then able to retrieve information from the transport stream. Such a set-top box

typically has only one tuner and is thus merely able to receive one single transport stream at a time. When a user wants to look at a television program, or wants to run an interactive application, or wants to access other kinds of data the set-top box or television set tunes to the corresponding transport stream and retrieves and processes the required data from the service as it is being broadcast at that moment.

Interactive applications like for instance tele-banking, tele-shopping or an electronic newspaper are typically broadcast in a carousel-like fashion, i.e., the therewith corresponding data sections are repeated periodically in the transport stream. For instance, both the Digital Video Broadcasting (DVB) and Digital Audio-Visual Council (DAVIC) standards have specified Digital Storage Media Command and Control (DSM-CC) protocol object carousels as known from the above mentioned document for broadcasting interactive applications. The response time of this kind of application[s] can be improved considerably by applying some kind of caching in the set-top box, i.e. pre-fetching and storing sections in the set-top box which are likely to be accessed in the future. Otherwise, if pre-fetching and caching is not used and the set-top box wants to retrieve a part of the interactive application, the set-top box must wait until that particular part is broadcast again. In order to be able to cache data, the set-top

box must have access to a storage device like for instance a hard disk. The set-top box can also use this storage device to store linear television content, like for instance short news bulletins or weather forecasts. These programs can be viewed by the user whenever this is convenient.

The paragraph on page 5 at lines 23–32 of the specification was amended herein as follows:

In Figure 2 the layered structure of DSM-CC object carousels is shown. The objects of a DSM-CC object carousel are broadcast in modules. Such a module is a container of objects and comprises a number of DownloadDataBlock messages (which are MPEG-2 private sections). In Figure 2 module 42 comprises the objects 32, 36 and 40. These objects are including in so-called Broadcast Interoperable (BIOP) object reference[-] messages. In such a BIOP-message the object is preceded by a message header. In Figure 2 a first BIOP-message comprises a message header 30 and the object 32, which object may include directory information. A second BIOP-message comprises a message header 34 and the object 36, which object 36 may include stream information.

A third BIOP-message comprises a message header 38 and the object 40, which object 40 may include file information.

Claims 1–8 were amended herein as follows:

1 1. (amended) A transmission system for transmitting a multiplex signal [(12)] from a
2 transmitter [(10)] to a receiver[(14)], said multiplex signal [(12)] comprising a periodically
3 repeated plurality of modules [(42)] each comprising at least one object[(32, 36, 40)], the
4 receiver [(14)] comprising extracting means [(16)] for extracting objects [(32, 36, 40)] from the
5 multiplex signal[(12)], [characterized in that]wherein the extracting means [(16)] are embodied
6 so as to extract the objects [(32, 36, 40)] in dependence on module related information present
7 in the multiplex signal[(12)].

1 2. (amended) A transmission system according to Claim 1, [characterized in that]wherein the
2 module related information is contained in a single information section.

1 3. (amended) A transmitter [(10)] for transmitting a multiplex signal [(12)], said multiplex
2 signal [(12)] comprising a periodically repeated plurality of modules [(42)], the modules [(42)]
3 each comprising at least one object[(32, 36, 40)], [characterized in that]wherein the transmitter
4 [(10)] is embodied so as to insert in the multiplex signal [(12)] module related object extraction
5 information.

1 4. (amended) A transmitter [(10)] according to Claim 3, [characterized in that]wherein the
2 module related object extraction information is contained in a single information section.

1 5. (amended) A receiver [(14)] for receiving a multiplex signal [(12)], said multiplex signal
2 [(12)] comprising a periodically repeated plurality of modules [(42)], the modules [(42)] each
3 comprising at least one object[(32, 36, 40)], the receiver [(14)] comprising extracting means
4 [(16)] for extracting objects [(32, 36, 40)] from the multiplex signal [(12)], [characterized in
5 that]wherein the extracting means [(16)] are embodied so as to extract the objects [(32, 36, 40)]
6 in dependence on module related information present in the multiplex signal [(12)].

1 6. (amended) A receiver [(14)] according to Claim 5, [characterized in that]wherein the module
2 related information is contained in a single information section.

1 7. (amended) A multiplex signal [(12)] comprising a periodically repeated plurality of modules
2 [(42)], the modules [(42)] each comprising at least one object[(32, 36, 40)], [characterized in
3 that]wherein the multiplex signal [(12)] further comprises module related object extraction
4 information.

1 8. (amended) A multiplex signal [(12)] according to Claim 7, [characterized in that]wherein the
2 module related object extraction information is contained in a single information section.

SUMMARY

If any issues arise, or if the Examiner has any suggestions for expediting allowance of this Application, the Applicant respectfully invites the Examiner to contact the undersigned at the telephone number indicated below or at *wmunck@davismunck.com*.

The Commissioner is hereby authorized to charge any additional fees connected with this communication or credit any overpayment to Deposit Account No. 50-0208.

Respectfully submitted,

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Date: _____

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